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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,117	02/25/2004	Yoshiki Yoshida	249155US2	1977
22850 7590 09/18/2008 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER AL HASHIMI, SARAH				
ART UNIT 2853		PAPER NUMBER		
NOTIFICATION DATE 09/18/2008		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/785,117

Applicant(s)

YOSHIDA, YOSHIKI

Examiner

Sarah Al-Hashimi

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) 4-11, 13-16, 19, 21-23, 28-35, 37-40 and 44-63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 12, 17, 18, 20, 24-27, 36, 41-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/27/2008 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,2,17,18,24,25,41,42 are rejected under 35 U.S.C. 102(b) as being anticipated by Allen (US 5,796,511).

Claim 1: a pixel clock generating unit that generates first and second pixel clocks, which are used for controlling timings of projection of said laser beams, separately for each of said laser light sources, and for performing a phase change of each of said first and second pixel clocks (fig 2 #212); and a phase control unit that controls said first pixel clock independent of said second pixel clock and controls said second pixel clock independent of said first pixel clock (fig 2 #220).

Claim 2: said phase control unit generates control pulse signals for controlling the phase change of the first and second pixel clocks generated by said pixel clock generation unit means, respectively, and outputs the control pulse signals to said pixel clock generation unit means, and said pixel clock generating unit performs the phase change of said first and second pixel clocks when said control pulse signals are supplied thereto (col 9 line 21-26 "Pixel clocks 212A and 212B and clock phase shifters 214A and 214B are also connected to the AOM 220 via video data registers 216A and 216B and AOM drivers 217A and 217B, which produce radio frequency (RF) sweep signals modulated by the video data, to time emissions from the respective AOM channels 220A and 220B on a pixel by pixel basis such that the emission of the laser light which is directed through the respective channels 220A and 220B of the dual channel AOM 220").

Claim 17: a pixel clock generating unit that generates first and second pixel clocks for performing independently a modulation control of each of said laser light sources (fig 2 #212), and changes independently a phase of each of said first and second pixel clocks of said laser light sources based on control pulse signals supplied thereto from a phase control unit that controls said first pixel clock independent of said second pixel clock and controls said second pixel clock independent of said first pixel clock (fig 2 #220).

Claim 18: a synchronization detection unit that detects the laser beams from said laser light sources at a position outside an image formation area where the electrostatic latent image is formed on said medium to be scanned in the main-scanning direction and for outputting a synchronization detection signals, which specify scan start positions of said laser beams in the main-scanning direction, respectively, wherein said pixel

clock generating unit generates said first and second pixel clocks in synchronization with said synchronization detection signals (col 5 line 55-67 "the scanning system may include a detector, such as a quadrature detector, configured to detect the geometric relationship between the deflected beam(s) and another beam or a reference corresponding to the spin axis of the spin deflector, after deflection of the beam(s) with respect to the spin axis of the spin detector. The detector may include a photosensor, e.g. charge couple device (CCD), a photodetector, e.g. a photodiode array, or any other suitable light detection device. As may be desirable, the detector can be configured to detect the geometric relationship prior to and/or during writing on the imaging surface. A controller is typically included to control the operations of the translating lens and/or acousto-optic modulator element, as well as the pixel clock and clock phase shifter, in accordance with the detected relationship").

Claim 24: a pixel clock generation step of generating first and second pixel clocks, which are used for controlling timings of projection of said laser beams, separately for each of said laser light sources (fig 2); a phase control step of controlling a phase control of first pixel clock independent of said second pixel clock and controls said second pixel clock independent of said first pixel clock; and a phase change step of performing the phase change of each of said first and second pixel clocks in accordance with the phase control step (fig 2 #220).

Claim 25: said phase control step generates control pulse signals for controlling the phase change of the first and second pixel clocks generated in said pixel clock generation step, respectively, and outputs the control pulse signals to said pixel clock

generation step, and said pixel clock generation step performs the phase change of said first and second pixel clocks when said control pulse signals are supplied thereto (col 9 line 21-26 "Pixel clocks 212A and 212B and clock phase shifters 214A and 214B are also connected to the AOM 220 via video data registers 216A and 216B and AOM drivers 217A and 217B, which produce radio frequency (RF) sweep signals modulated by the video data, to time emissions from the respective AOM channels 220A and 220B on a pixel by pixel basis such that the emission of the laser light which is directed through the respective channels 220A and 220B of the dual channel AOM 220").

Claim 41: pixel clock generation means for generating first and second pixel clocks, which are used for controlling timings of projection of said laser beams, separately for each of said laser light sources, and for performing a phase change of each of said first and second pixel clocks (fig 2); and phase control means for controlling of said first pixel clock independent of said second pixel clock and controls said second pixel clock independent of said first pixel clock (fig 2 #220).

Claim 42: phase control means generates control pulse signals for controlling the phase change of the first and second pixel clocks generated by said pixel clock generation means, respectively, and outputs the control pulse signals to said pixel clock generation means, and said pixel clock generation means performs the phase change of said first and second pixel clocks when said control pulse signals are supplied thereto (col 9 line 21-26 "Pixel clocks 212A and 212B and clock phase shifters 214A and 214B are also connected to the AOM 220 via video data registers 216A and 216B and AOM drivers 217A and 217B, which produce radio frequency (RF) sweep signals modulated by the

video data, to time emissions from the respective AOM channels 220A and 220B on a pixel by pixel basis such that the emission of the laser light which is directed through the respective channels 220A and 220B of the dual channel AOM 220").

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3,26-27,43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen (US 5,796,511) in view of Morimoto (US 6,169,562).

Allen teaches:

Claim 27: a synchronization detection step of detecting the laser beams from said laser light sources at a position outside an image formation area where the electrostatic latent image is formed on said medium to be scanned in the main-scanning direction and outputting a synchronization detection signals, which specify scan start positions of said laser beams in the main-scanning direction, respectively, wherein said pixel clock generation step generates said first and second pixel clocks in synchronization with said synchronization detection signals (col 5 line 55-67 "the scanning system may include a detector, such as a quadrature detector, configured to detect the geometric relationship between the deflected beam(s) and another beam or a reference corresponding to the spin axis of the spin deflector, after deflection of the beam(s) with respect to the spin axis of the spin detector. The detector may include a photosensor, e.g. charge couple

device (CCD), a photodetector, e.g. a photodiode array, or any other suitable light detection device. As may be desirable, the detector can be configured to detect the geometric relationship prior to and/or during writing on the imaging surface.

A controller is typically included to control the operations of the translating lens and/or acousto-optic modulator element, as well as the pixel clock and clock phase shifter, in accordance with the detected relationship").

Allen does not teach but Morimoto teaches:

Claim 3: an operation unit that inputs setting values, which indicate an interval and a number of pulses of said control pulse signals for each of said laser light sources, wherein said phase control unit generates said control pulse signals of said first and second pixel clocks, respectively, based on the setting values input by said operation unit, and outputs said control pulse signals to said pixel clock generating unit (fig 9 #308).

Claim 26: an input step of inputting setting values, which indicate an interval and a number of pulses of said control pulse signals for each of said laser light sources, wherein said phase control step generates said control pulse signals of said first and second pixel clocks, respectively, based on the setting values input in said input step, and outputs said control pulse signals to said pixel clock generation step (fig 9 #308).

Claim 43: input means for inputting setting values, which indicate an interval and a number of pulses of said control pulse signals for each of said laser light sources, wherein said phase control means generates said control pulse signals of said first and second pixel clocks, respectively, based on the setting values input by said input

means, and outputs said control pulse signals to said pixel clock generation means (fig 9 #308).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Allen to incorporate input means for inputting setting values, which indicate an interval and a number of pulses of said control pulse signals for each of said laser light sources, wherein said phase control means generates said control pulse signals of said first and second pixel clocks, respectively, based on the setting values input by said input means, and outputs said control pulse signals to said pixel clock generation means as taught by Morimoto in order to improve imaging by increasing control over the laser imaging by having specific pulsation requirement for optimal writing.

6. Claim 12,20,36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen (US 5,796,511) in view of Suzuki (US 2003/0156184).

Allen does not teach but Suzuki teaches:

Claim 12: said phase control unit controls a phase of each of said pixel clocks so that the phase is changed by a time unit shorter than a period of each of said pixel clocks (para 137 "make the cycle of the clock 1 long or short according to the value of the comparison value 1").

Claim 20,36: pixel clock generating unit controls a phase of each of said first and second pixel clocks so that the phase is changed by a time unit shorter than a period of each of said first and second pixel clocks (para 137 "make the cycle of the clock 1 long or short according to the value of the comparison value 1").

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Allen to incorporate pixel clock generating unit controls a phase of each of said first and second pixel clocks so that the phase is changed by a time unit shorter than a period of each of said first and second pixel clocks as taught by Suzuki to ensure accuracy in imaging.

Response to Arguments

7. Applicant's arguments with respect to claims 1-3,12,17-18,20,24-27,36,41-43 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Al-Hashimi whose telephone number is 571 272 7159. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 571 272 2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either PAIR or Public PAIR. Status information for unpublished applications is available through PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SA/

/STEPHEN D. MEIER/
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